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FORESTS IN THE ECONOMY OF THE SOUTH

by

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Forest Survey of the South

The Occasional Papers of the Southern Forest Experiment Station present information on current southern forestry problems under investigation at the Station. In some cases, these contributions were first presented as addresses to a limited group of people,and as "occasional papers" they can reach a much wider audience. In other cases, they are summaries of investigations prepared especially to give a report of the progress made in a particular field of research. In any case, the statements herein contained should be considered subject to correction or modification as further data are obtained.

FORESTS IN THE ECONOMY OF THE SOUTH 1/

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Once again the South is suffering from a maladjustment in its agricultural economy. Millions of acres of former cotton fields have been thrown out of cultivation and a considerable part of its population is suffering because of lack of opportunity for gainful employment. Its railroads, its power companies, and its ports have all been affected adversely, and the tax bases of its cities, counties, and States have been weakened. The Nation and the South itself is feeling the blight of its lessened purchasing power.

Everywhere in the South its leaders have come to believe that the most hopeful remedy for a distressing situation lies in an expansion of industries, particularly manufacturing. Every part of the South is taking stock of its resources and facilities with a view toward bidding for factories (with payrolls and with raw-material requirements) that will furnish dependable, profitable, nearby markets for its labor and produce.

It can be understood, therefore, how gratefully the recent spectacular expansion of the pulp and paper industry in the South has been received. In the last 4 years or so, 15 new plants have been (or are being) built south of the Potomac River, representing an investment of around $100,000,000 of new capital in plants alone, to say nothing of additional millions invested in tributary forest land. This is a big step in the direction the South wants to take.

This development, as much as anything else, has directed attention to one of the South's chief assets—its forest resource. It is my purpose in this brief article to give a view of the salient facts concerning the amount, character, and capacity of the timber resource of that part of the South embraced in the eight States, or parts of States, lying west of the Savannah River and including Georgia, Florida, Alabama, Mississippi, Louisiana, the eastern timber belt of Texas, about three-fourths of Arkansas, and the extreme southeast corner of Oklahoma. This area, which is shown on the accompanying map (fig. 1), for convenience is hereafter designated "the lower South."

The data presented here were gathered by the Forest Survey of the South, which, as an activity of the Southern Forest Experiment Station, has been making a field inventory of the forest growing stock, and concurrently, a detailed canvass of the forest-using industries. This work has been under way since 1932, and to date over 40 resource reports have been made available for public use.

The over-all land area of the region covered is, in round figures, 213 million acres. Of this area, the Survey determined that 122 million acres, or nearly 58 percent, can be classified as productive forest land. The areas characterized by certain dominant forest type-groups are shown on the

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1/ This paper was prepared for inclusion in the souvenir program of the Annual Southern Paper Festival, Savannah, Ga., April 17-19, 1939.

accompanying map. The Survey found that, for the lower South as a whole, old-growth forest stands occupy only 15 percent of the forest area; second-growth stands of sawlog size occupy 38 percent; second-growth stands under sawlog size, 34 percent; seedling areas, 5 percent; and clear-cut land, i.e., land from which the timber crop has been totally removed and no new crop has taken its place, 8 percent.

On this land the timber cruisers found the huge volume of 255 billion board feet of timber in sound trees of sawlog size. The total growing stock of the lower South, including not only trees of sawlog size, but all sound trees 5 inches d.b.h. and larger, and expressed in standard cords (4 x 4 x 8 ft.), stacked with the bark on, totaled the sizable sum of more than one billion cords, of which 525 million cords are pine. In the accompanying tabulation (table 1) is a statement of the forest area and the volume of the growing stock by States, expressed in cords. It should be observed that the volume in the hardwood species makes up more than half the total volume of growing stock.

Table 1. - Forest area and volume of growing stock[1/] by States

State	Total productive forest area	Net cordwood volume of growing stock		Total
		Pine	Hardwood and cypress	
	Thousand acres	Thousand cords[2/]		
Texas[3/]	10,553	67,348	52,324	119,672
Oklahoma[3/]	2,961	8,028	8,696	16,724
Arkansas[3/]	14,820	65,214	99,287	164,501
Louisiana	16,194	53,033	115,651	168,684
Mississippi	15,869	57,015	91,552	148,567
Alabama	18,860	91,449	75,960	167,409
Georgia[4/]	21,036	122,959	79,197	202,156
Florida[5/]	21,653	59,776	48,353	108.129
Total	121,946	524.822	571.020	1,095,842

1/ Includes all sound trees 5.0 inches d.b.h. and larger. The upper stems to a 4-inch minimum are included for all sizes of pine, for hardwoods 5.0 to 12.9 inches d.b.h., and cypress 5.0 to 8.9 inches.
2/ Stacked standard cords (4 x 4 x 8 ft.) including bark.
3/ Includes only that part of the State in the forest region of the lower South. The south Missouri delta is included with Arkansas.
4/ Excludes the Okefenokee Swamp and Coastal Islands, which have an estimated productive forest acreage of 299,000 acres.
5/ Excludes the Ocala National Forest and the Everglades, which have an estimated productive forest acreage of 224,000 acres.

In the long run, and if the South's development is to be based soundly, the forest-using industries must keep at least within the productive capacity of the forest growing stock. We have not always done this, and in the past many of our communities and the region as a whole have suffered because of short-sighted liquidation.

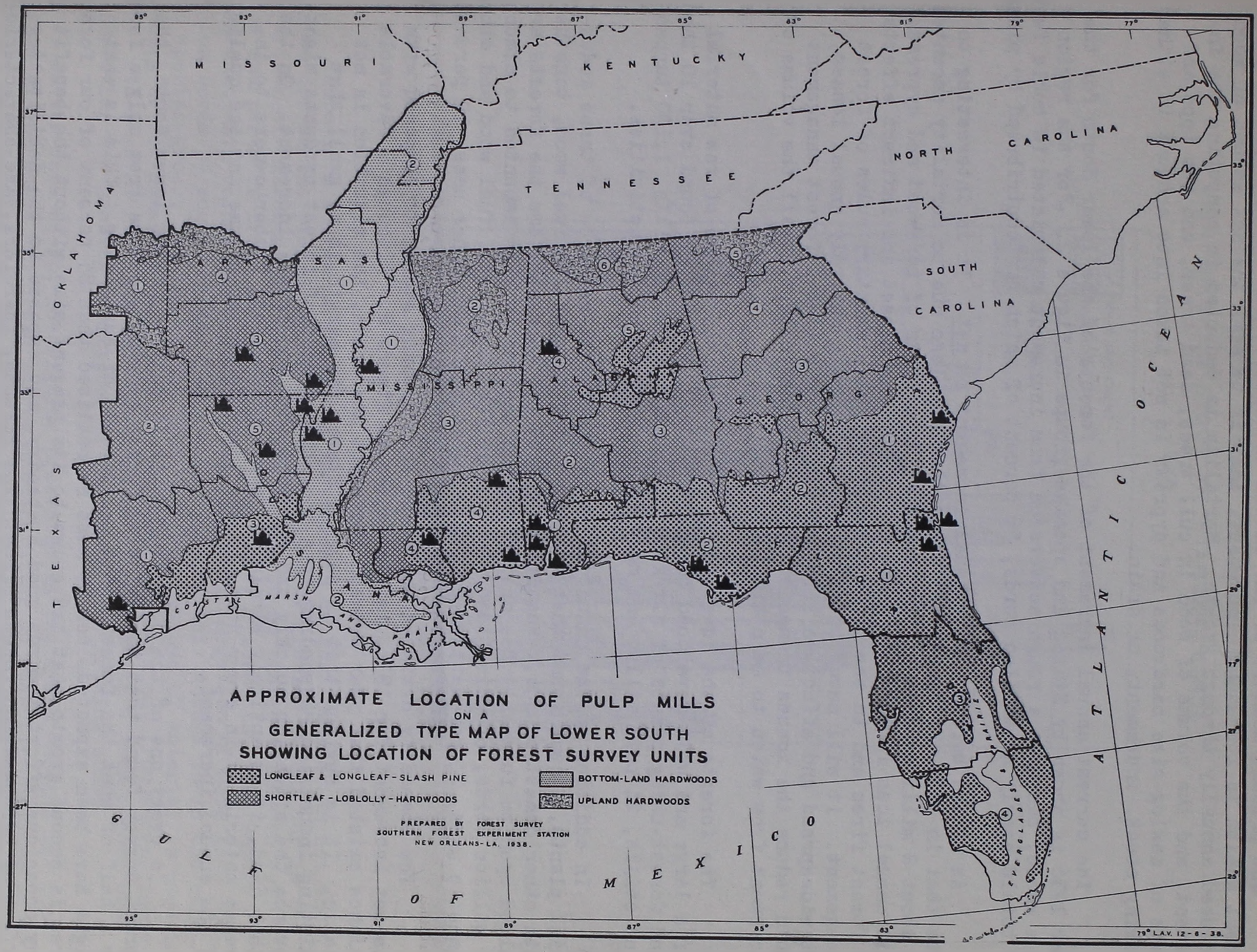
MISSOURI
KENTUCKY
TENNESSEE
NORTH CAROLINA
SOUTH CAROLINA
OKLAHOMA
ARKANSAS
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
TEXAS
LOUISIANA
COASTAL MARSH AND PRAIRIE
EVERGLADES
ATLANTIC OCEAN
GULF OF MEXICO
APPROXIMATE LOCATION OF PULP MILLS
ON A
GENERALIZED TYPE MAP OF LOWER SOUTH
SHOWING LOCATION OF FOREST SURVEY UNITS
LONGLEAF & LONGLEAF-SLASH PINE
SHORTLEAF-LOBLOLLY-HARDWOODS
BOTTOM-LAND HARDWOODS
UPLAND HARDWOODS
PREPARED BY FOREST SURVEY
SOUTHERN FOREST EXPERIMENT STATION
NEW ORLEANS-LA. 1938.
95° 93° 91° 89° 87° 85° 83° 81° 79° 77°
37° 35° 33° 31° 29° 27° 25°
79° L.A.V. 12-6-38.

FIGURE 1

The present measure of the extent to which we may safely dip into our forest wealth is its annual increment, that is to say, the net amount of wood produced annually through growth. Mortality is deducted in computing the increment, and the volume of wood in cull trees, dead trees, and the tops and limbs of sawlog-size hardwoods and cypress is not taken into account in either growing stock, increment, or drain.

The current annual increment of the forests of the lower South for the year 1936 is shown by States and species-groups in figure 2. For the region as a whole, based on a rough conversion from increment calculated in cubic feet, it totals nearly 48 million cords, 56 percent of which was contributed by pines.

As stated before, this annual increment is net. It is interesting to note that in 1936 the Survey estimated that the loss due to mortality amounted to about 8 million cords of pine and 8 million cords of hardwood and cypress. This annual loss is due in a large measure to the direct and indirect effects of forest fires and to the non-observance of the elementary rules of forest management. It will never be possible to eliminate entirely annual losses, but widespread and effective fire protection and rational forest management could reduce the losses tremendously and, to that extent, swell the volume of increment from which to maintain industry.

The forests of the lower South are already the source of raw material for a large and well-developed forest industry. The Survey found over 10 thousand forest-using plants of all kinds, including 8,000 sawmills, 1,100 turpentine stills, 24 pulp mills, and many other forest-products activities.

In addition to the annual drain of the forest resource of these industrial plants, it was found that the annual requirement for fuel wood, together with other domestic uses, constitutes one of the largest items the forests are called upon to furnish. The drain from all sources in 1936 amounted to almost 40 million cords, of which lumber accounted for 53 percent; fuel wood and other domestic uses, 24 percent; pulpwood, 4 percent; and all other uses, 19 percent.

The commodity drain on the sound-tree growing stock, as compared with the net increment for 1936, is also shown in figure 2. Although a favorable balance existed that year between increment and drain, the situation is not static. It is obvious that in several States the margin is so small that existing industries responding to a boom-time demand of forest products might reverse the situation quickly and cut more than the annual increment. On the other hand, it is entirely within the power of southern timber owners to increase materially in every State in the lower South the volume and the quality of the annual increment.

In every one of the 30 Survey units it covered in the lower South, the Forest Survey found that the existing forest growing stock is from only a fourth to a half of what the forest sites are capable of sustaining. This is what might have been expected, for it must be realized that 85 percent of our forest area is second growth that has grown to its present size without the benefit of any conscious effort towards good husbandry, and exposed to the debilitating effect of oft-repeated forest fires. The forests, therefore, are characterized over many large areas by thin stands handicapped by the presence of cull trees, and in some sections by badly over-crowded young stands, in which density of stocking increases mortality and decreases increment.

TOTAL DRAIN VERSUS NET INCREMENT ON GROWING STOCK IN STANDARD CORDS 1936

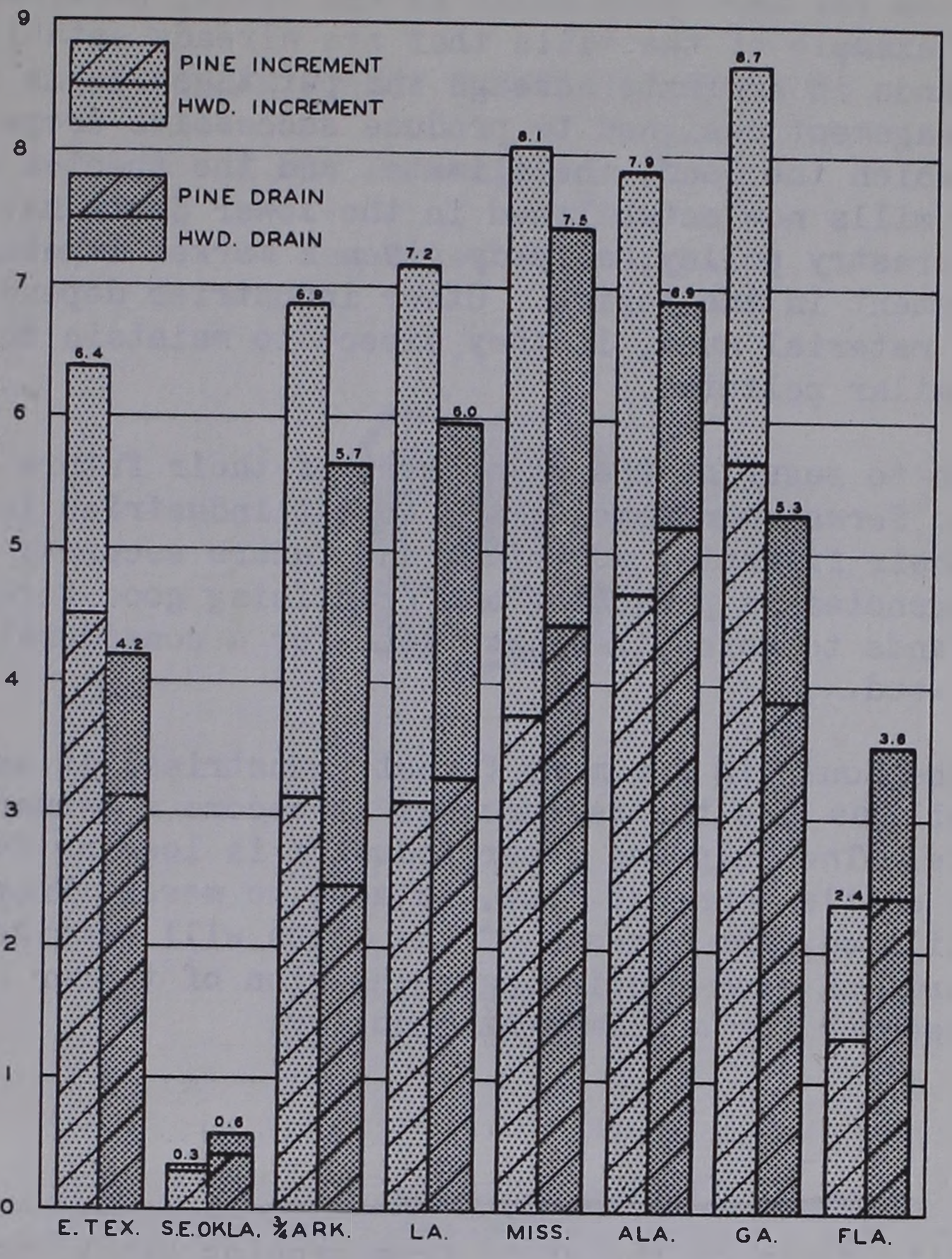

FIGURE 2

There is a source of supply in the forests of the lower South not accounted for in the preceding statement of volume of growing stock, nor in the comparison of increment and drain. This is the sound usable volume in cull trees and parts of trees not included in the above statements. The Survey found that this volume has accumulated to the very large sum of more than 350 million cords of wood! By far the greater part of this volume is in the hardwood species-group. To the extent that this huge volume of material is used in industry or for domestic purposes, it can supplement the cut from annual increment. Its removal from the forest stands would constitute a much needed step in improving the growing conditions of the sound-tree growing stock.

On the face of it, the figures presented in the chart showing the comparison of increment and drain may be disappointing, in that they apparently do not hold much promise for the large-scale industrial expansion that the South so sorely needs. But, fortunately, this is not true; the present forest area in the lower South is capable of supporting on a sustained-yield basis a greatly expanded forest industry. It cannot do this, however, if it is treated

in the future as it has been in the past. The forests of the South are, in the main, young stands that will respond promptly and satisfactorily to intelligent efforts to develop them.

There is room for more pulp mills in the South, provided that the newcomers follow the example of the mills that are already established and buy suitable forest lands in adequate acreage and put these lands under sound technical forestry management designed to produce successive crops of timber to the full capacity of which the land, the climate, and the species are capable. The 24 pulp and paper mills now established in the lower South have, through their forward-looking forestry policy, already given a marked impetus to better forest-land management in the region. Other industries depending upon the forest for their raw material must, if they expect to maintain their places in the sun, adopt similar policies.

In addition to securing the major part of their future supplies through land ownership and forest management, the forest industries in all categories will find it to their financial advantage and future security to join forces with the public agencies in preaching and practicing good forest management on the non-company lands to which they must look for a considerable part of their requirements for wood.

Eager as the South is for more forest industries, it wants only those industries that will so use the resource as to become a permanent part of its economic structure. The pulp and paper industry is looking for the promised land where it may settle down, at last, to move no more. Properly managed, protected, and utilized, the forests of the South will provide a sound basis for a secure future—an ever-continuing succession of timber crops that will be a permanent resource for a permanent industry.

Note: Assistance in the preparation of these materials was furnished by the personnel of Works Progress Administration Official Projects 701-3-9 and 365-64-3-7.